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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Guthrie, et al.		
Serial No.	09/818,092	Group Art Unit:	2817
Filed:	March 26, 2001	Examiner:	B. Lee
Title:	IMPROVED HIGH INTENSITY LIGHT SOURCE		

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RESPONSE TO OFFICE ACTION MAILED JUNE 17, 2002

Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action Mailed June 17, 2002, please amend the application as follows:

AMENDMENTS IN CLEAN FORM

In the Drawings:

Please replace the drawings filed on June 14, 2001, with the attached two sheets of formal drawings.

In the Written Description:

Please replace the paragraph on page 6, lines 13-24 with the following:

The sapphire window 34 may function as a "light integrator" for transmitting the light of the plasma lamp from the chamber, for example, to application-specific optics. The tapered, conical sapphire window 34 may be sealed against the surrounding ceramic material forming the channel 30 by coating the outside edges of the sapphire window with a material such as glass containing MgO, or alternatively, with SiO_3 or SiO_2. Next the mating surfaces of both the window and the ceramic channel may each be coated with a thin layer of metallic material, such as copper, a copper alloy, or platinum. Then a piece of preferably pure platinum wire may be placed between the two thin film layers. Finally, a laser is used to heat the wire, and thereby melt the metallic material and bond the layers together.

Please replace the paragraph on page 7, lines 9-26 with the following:

Figure 2 shows a second embodiment of a lamp in accordance with the invention which is somewhat similar to Figure 1 except that the gas housing has an integrated RF energy structure. In Figure 2, the elements are designated similarly to Figure 1, using like reference numerals for like elements. The gas fill chamber 24 may be housed in a gas housing 20 preferably comprising a ceramic material 22 and provided with a light transmissive window 34, preferably of a tapered rod of sapphire as previously described and a fill plug 38. In this embodiment, an RF energy structure such as one or more coils 36 may be formed within the ceramic housing. The coils 36 function to inductively couple radio wave radiation energy to the gas fill in chamber 24 in order to create the

radio wave energy is integral with the ceramic housing 20 that contains the plasma gas fill. This integration of the RF structure of the plasma lamp and the gas housing into a single structure, as shown, improves the coupling of RF energy to the gas, and allows significant gains in lamp efficiency and compactness.

Please replace the paragraph on page 7, lines 27-30 with the following:

The second embodiment may also comprise segments of ferrite material 41 placed adjacent the coils 36 in order to help concentrate the magnetic field associated with the coils 36 on the gas fill. An illustration of this embodiment is shown in Figure 7, in which like reference numerals are used for like elements of Figure 2.

Please replace the paragraph on page 9, lines 15-23 with the following:

Figures 4A and 4B show a fourth embodiment of a light source in accordance with the invention. A gas housing 60 (see Fig. 4B) for the gas fill is formed so as to be integral with a cylindrical resonant waveguide structure 62 comprising ceramic material. Because a separate bulb is not used, the gas housing 60 and waveguide 62 comprise a single, integrated structure. A source of radio wave radiation 64 (see Fig. 4B) may be disposed near one end of the waveguide, while the gas housing is formed at an opposite end. The gas housing 60 may include a window 66 preferably made from sapphire.